

WHAT IS CLAIMED:

1. An extendible exhaust nozzle bell for a rocket engine of an aircraft or spacecraft which comprises a first part featuring a quasi-conical shape with smaller diameter fixedly arranged on the motor of the rocket engine and a second part featuring a quasi-conical shape with greater diameter arranged in a flexible manner with respect to this first part, whereby in a front stowed position the second part of the exhaust nozzle bell surrounding the first part of the exhaust nozzle bell is located nearer to the rocket motor, and in a rear operating position continuing the shape of the first part it is arranged further away from the rocket motor, and with an extension mechanism for extending the second part of the exhaust nozzle bell from the stowed position into the operating position, whereby the extension mechanism comprises several swiveling extension arms distributed over the circumference of the exhaust nozzle bell, and coupled between the first part and the second part of the exhaust nozzle bell, which extension arms are connected in a hinged manner at a first end to a support structure provided on the outside of the first part of the exhaust nozzle bell, wherein the extension arms are arranged on their second end in a displaceable manner with respect to the inside of the second part of the exhaust nozzle bell and can be swiveled while reducing the radial distance of their second end to the first part of the exhaust nozzle bell, so that the second part of the exhaust nozzle bell can be extended in the direction of the rear operating position during swiveling in of the extension arms to the first part of the exhaust nozzle bell following the quasi-conical shape of the second part of the exhaust nozzle bell.

2. Exhaust nozzle bell according to claim 1, wherein the extension arms feature a sliding or rolling element on their end facing the second part (14) of the exhaust nozzle bell, which sliding or rolling element is provided for a sliding or rolling movement with respect to the inside of the second part of the exhaust nozzle bell while swiveling in the extension arms during the extension of the second part of the exhaust nozzle bell.

3. Exhaust nozzle bell according to claim 1, wherein the extension arms are supported on their first end around a hinged axle arranged in the circumferential direction of the exhaust nozzle bell and can be swiveled in a radial plane containing the longitudinal axis of the rocket engine.

4. Exhaust nozzle bell according to claim 1, wherein a first activating device coupled with the extension arms is provided for swiveling in the extension arms, and a second activating device coupled with the second part of the exhaust nozzle bell is provided for moving the same in the longitudinal direction of the rocket engine from the stowed position into the operating position.

5. Exhaust nozzle bell according to claim 4, wherein the first activating device contains an actuator and a transport screw driven by the actuator and coupled with the extension arm for a swiveling movement of the same, which transport screw is changeable in its effective length.

6. Exhaust nozzle bell according to claim 4, wherein the first activating device contains an actuator and a tension cable driven by the actuator and coupled with the extension arm for a swiveling movement of the same, and a spring-loaded device acting against the tension of the tension cable on the extension arm.

7. Exhaust nozzle bell according to claim 4, wherein the second activating device contains an actuator, a rope drum driven by the actuator and a tension cable for a transport of the same wound on the rope drum and coupled with the second part of the exhaust nozzle bell.

8. Exhaust nozzle bell according to claim 4, wherein the first and/or second activating device contains a pivoted collecting ring surrounding the first part of the exhaust nozzle bell in the circumferential direction that can be driven by an actuator for a rotation of the same, and tension cables which are placed around the collecting ring and are changeable in their effective length during the rotation of the same, and which are coupled with the extension arms or the second part of the exhaust nozzle bell for their activation.

9. Exhaust nozzle bell according to claim 8, wherein a central drive is provided for the collecting ring.

10. Exhaust nozzle bell according to claim 1, wherein the extension arms are embodied as triangular guides tapering from their first end towards their second end.

11. Exhaust nozzle bell according to claim 1, wherein guide devices for a longitudinal guiding of the second part of the exhaust nozzle bell on a last part of the extension movement from the stowed position into the operating position are provided coupled between the first part and the second part of the exhaust nozzle bell.

12. Exhaust nozzle bell according to claim 11, wherein the guide devices contain guide rollers or sliders mounted on the front end of the second part of the exhaust nozzle bell and guide rails mounted on a support structure on the first part of the exhaust nozzle bell to accept and guide the guide rollers or sliders.